ACC NR: AP7000369

the end of the control shaft) is greater than the total area of the reaction plungers acting on the control shaft during the supply of liquid to the opposite cylinder cavity. Orig. art. has: 1 figure. [KT]

SUB CODE: 13/ SUBM DATE: 02Jun65/

Card 2/2

GONIKBERG, YU. M.

IA 12T36

USSR/Controls
Automobiles - Parts

Nov/Dec 1946

"High-production Control Accessories," Yu. M. Gonikberg, 4 pp

"Avtomobil'naya Promyshlennost'" No 11/12

Describes automatic accessories for checking dimensions of auto parts. Discusses basic requirements for multiple-position control accessories, also electrocontact heads, accessories for testing connecting rods, crankshafts, differentials, valve shafts, plunger disks, etc. Eleven diagrams.

12T36

BABKIN, S.I., kandidat tekhnicheskikh nauk; BALAKSHIN, B.S., professor,
doktor tekhnicheskikh nauk; BEYZEL'MAN, R.D., inzhener; BELYAYEV,
V.N., kandidat tekhnicheskikh nauk; BIRGER, I.A., kandidat tekhni-
cheskikh nauk; BOGUSLAVSKIY, P.Ye., kandidat tekhniceskikh nauk;
BOROVICH, L.S., kandidat tekhnicheskikh nauk; VOL'MIR, A.S.,
professor, doktor tekhnicheskikh nauk; GONIKBERG, Yu.M., inzhener;
GORODETSKIY, I.Ye., professor, doktor tekhnicheskikh nauk; GORDON,
V.O., professor; DIMENTBERG, F.M., kandidat tekhnicheskikh nauk;
DOSCHATOV, V.V., inzhener, IVANOV, A.G., kandidat tekhnicheskikh
nauk; KINASOSHVILI, R.S., professor; KODNIR, D.S., kandidat tekhni-
cheskikh nauk; KOLOMIYTSEV, A.A., kandidat tekhnicheskikh nauk;
KRUTIKOV, I.P., kandidat tekhnicheskikh nauk; KUSHUL', M.Ya., kandi-
dat tekhnicheskikh nauk; LEVENSON, Ye.M., inzhener; MAZYRIN, I.V.,
inzhener; MALININ, N.N., kandidat tekhnicheskikh nauk; MARTYNOV, A.D.,
kandidat tekhnicheskikh nauk; NIBERG, N.Ya., kandidat tekhnicheskikh
nauk; NIKOLAYEV, G.A., professor, doktor tekhnicheskikh nauk;
PETRUSEVICH, A.I., doktor tekhnicheskikh nauk; POZDNYAKOV, S.N.,
dotsent; PONAMOREV, S.D., professor, doktor tekhnicheskikh nauk;
PRIGOROVSKIY, N.I., professor, doktor tekhnicheskikh nauk; PRONIN,
B.A., kandidat tekhnicheskikh nauk; RESHETOV, D.N., professor, doktor
tekhnicheskikh nauk; SATEL', E.A., professor, doktor tekhnicheskikh
nauk; SERENSEN, S.V.; SLOBODKIN, M.S., inzhener; SPITSYN, N.A.,
professor, doktor tekhnicheskikh nauk; STOLBIN, G.B., kandidat
tekhnicheskikh nauk; TAYTS, B.A., kandiat tekhnicheskikh nauk;
TETEL'BAUM, I.M., kandidat tekhnicheskikh nauk; UMANSKIY, A.A.,
professor, doktor tekhnicheskikh nauk; FEODOS'YEV, V.I., professor,
doktor tekhnicheskikh nauk;

(Continued on next card)

BABKIN, S.I.--- (continued) Card 2.

KHAYT, D.M., kandidat tekhnicheskikh nauk; EYDINOV, V.Ya., kandidat tekhnicheskikh nauk; SHRAYBER, M.N., inzhener, nauchnyy redaktor; SHEDROV, V.S., kandidat tekhnicheskikh nauk, nauchnyy redaktor; TSVETKOV, A.P., dotsent, nauchnyy redaktor; SLEZNIKOV, G.I., inzhener, nauchnyy redaktor; MARKUS, M.Ye., inzhener, nauchnyy redaktor; KARGANOV, V.G., inzhener, nauchnyy redaktor; ACHERKAN, N.S., doktor tekhnicheskikh nauk, professor, redaktor; SOKOLOVA, T.F., tekhnicheskiy redaktor

[Manual of machinery manufacture] Spravochnik mashinostroitelia; v trekh tomakh. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry. Vol.3. 1951 1098 p. (MLRA 10:9)

1. Deystvitel'nyy chlen Akademii nauk USSR (for Serensen) (Machinery)

LEVENSON, Yevgeniy Mikhaylovich; GONIKBERG, Yuriy Markovich; VVEDENSKIY, Tigriy Aleksandrovich; GIPP. B.A., inzhener, retsenzent; BELOUSOV, A.V., inzhener, redaktor; MODEL', B.I., tekhnicheskiy redaktor

[Construction of measuring devices and instruments in machine building] Konstruirovanie izmeritel'nykh prisposoblenii i instrumentov v mashinostroenii. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1956. 384 p. (MLRA 9:9)
(Measuring instruments) (Instrument industry)

GONIKBERG, Yu.M.

AL'SHITS, I.Ya., kandidat tekhnicheskikh nauk; BABKIN, S.I., kandidat tekhnicheskikh nauk; BALAKSHIN, B.S., doktor tekhnicheskikh nauk, professor; BEYSEL'MAN, R.D., inzhener; BELYAYEV, V.H., kandidat tekhnicheskikh nauk; BEREZINA, N.I., inzhener; BIRGER, I.A., doktor tekhnicheskikh nauk; BOGUSLAVSKIY, Yu.M., kandidat tekhnicheskikh nauk; BOROVICH, L.S., kandidat tekhnicheskikh nauk; GONIKBERG, Yu.M., inzhener; GORDON, V.O., professor; GORODETSKIY, I. Ye., doktor tekhnicheskikh nauk, professor; GROMAN, M.B., inzhener; DIKER, Ya.I., kandidat tekhnicheskikh nauk; DOSCHATOV, V.V., inzhener; IVANOV, A.G., kandidat tekhnicheskikh nauk; KINASOSHVILI, R.S., doktor tekhnicheskikh nauk; professor; KRUTIKOV, I.P., kandidat tekhnicheskikh nauk; LEVENSON, Ye.M., inzhsner; MAZYRIN, I.V. inzhener; MARTYNOV, A.D., kandidat tekhnicheskikh nauk; NIBERG, N.Ya., kandidat tekhnicheskikh nauk; NIKOLAYEV, G.A., doktor tekhnicheskikh nauk, professor; PETRUSEVICH, A.I., doktor tekhnicheskikh nauk; POZDNYAKOV, S.N., dotsent; PONOMAREV, S.D., doktor tekhnicheskikh nauk, professor; PRONIN, B.A. kandidat tekhnicheskikh nauk; RESHETOV, D.N., doktor tekhnicheskikh nauk, professor; SATEL', E.A., doktor tekhnicheskikh nauk, professor; SIMAKOV, F.F., kandidat tekhnicheskikh nauk; SLOBODKIN, M.S., inzhener; SPITSYN, N.A., doktor tekhnicheskikh nauk, professor; STOLBIN, G.B., kandidat tekhnicheskikh nauk; TAYTS, B.A., doktor tekhnicheskikh nauk; CHERNYSHEV, H.A., kandidat tekhnicheskikh nauk; SHNEYDEROVICH, R.M., kandidat tekhni-

(Continued on next card)

AL'SHITS, I.Ya., kandidat tekhnicheskikh nauk (and others)....... Card 2.

cheskikh nauk, EYDINOV, V.Ya., kandidat tekhnicheskikh nauk; ERLIKH, L.B., kandidat tekhnicheskikh nauk; ACHERKAN, N.S., doktor tekhnicheskikh nauk, professor, redaktor; MARKUS, M.Ye., inzhener, redaktor; KARGANOV, V.G., inzhener, redaktor; SOKOLOVA, T.F., tekhnicheskiy redaktor.

[Mechanical engineer's manual; in 6 volumes] Spravochnik mashinostroitelia; v shesti tomakh. Izd.2-e, ispr. i dop. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit. lit-ry, Vol.4, 1955. 851 p.
(Mechanical engineering) (MLRA 8:12)

GONIKBERG, Yu.M.

New pneumatic and electric transmitters. Stan.i instr. 29 no.12:
29-30 D '58. (MIRA 11:12)
(Photoelectric measurements)

28(5)
AUTHOR: Gonikberg, Yu.M. SOV/115-59-4-12/27

TITLE: A Device for Checking the Force of a Bellows-Type Thermostat (Pribor dlya proverki usiliya sil'fona termoregulyatora)

PERIODICAL: Izmeritel'naya tekhnika, 1959, Nr 4, p 20 (USSR)

ABSTRACT: Bellows-type thermostats are used for temperature control in household reirigarators and are gas-filled (freon-12). According to the specifications, a bellows-type thermostat must develop a force of 1.3-4.2 kg when placed into tanks containing a cooling liquid at -9 and -18°C, respectively. For checking this force, a device, as shown in figure 2, was developed at the Moskovskiy avtozavod imeni Likhacheva (Moscow Automobile Plant imeni Likhachev). The bellows-type thermostat acts on the membrane of a chamber filled with compressed air. A U-shaped mercury manometer is used for measuring the force of the thermostat, whereby the scale of the manometer will show this force directly in kg. There are 2 diagrams.

Card 1/1

GIPP, B.A.; GONIKBERG, Yu.M.; KAPLUN, M.M.; LEVENSON, Ye.M.; MARKOV, N.N.;
POLYANSKIY, P.N.; SHLEZINGER, G.S.; LEVENSON, Ye.M., nauchnyy red.;
BAYBYROV, B.S., red.; KOCHENOV, M.I., red.; MALYY, D.D., red.;
PROKOF'YEVA, L.G., red.izd-va; TIKHANOV, A.Ya., tekhn.red.

[Checking devices] Kontrol'nye prisposobleniia. Pod red. B.S. Baiburova, M.I.Kochenova i D.D.Malogo. Moskva, Gos.nauchno-tekhn. izd-vo mashinostroit.lit-ry, 1960. 338 p. (MIRA 13:12)

(Measuring instruments)

GONIKMAN, Iosif Grigor'yevich; KOVALKIN, Ivan Dmitriyevich; GLADKOV, V.A., red.; KAS'YANOV, A.P., red.; BARANOV, I.A., tekhn. red.

[In the name of a lofty goal] Vo imia vysokoi tseli. Murmansk, Murmanskoe knizhnoe izd-vo, 1960. 33 p. (MIRA 16:5)
(Murmansk Province—Fisheries)

SINAYUK, David Aronovich; GONIKMAN, M.Ye., retsenzent; GRACHEVA, A.V., red.

[Ways to improve welted footwear; quality, material expenditure, and production methods] Puti sovershenstvovaniia rantovoi obuvi; kachestvo, materialoemkost', sposob proizvodstva. Moskva, Legakaia industriia, 1965. 179 p. (MIRA 18:10)

1. Zamestitel' direktora po nauchnoy rabote Latviyskogo kompleksnogo nauchno-issledovatel'skogo instituta Gosudarstvennogo komiteta legkoy promyshlennosti pri Gosplane SSSR (for Gonikman).

GONIKMAN, V., gvardii podpolkovnik; GULAK, N., podpolkovnik

Working with reserve officers. Voen. vest. 40 no. 3:68-69
Mr '61. (MIRA 14:2)
(Russia—Armed forces—Reserves)

GONIKSTEIN.I.

Colienteritis in childhood. Sveik. apsaug. 8 no.9:26-31
S'63.

1. Vilniaus m. infekciñe ligonine. Vyr. gydytojas - I.Chomenka.

GONIN, G.B.

Possibility of deciphering the nature of ice from aerial photographs taken with a slit camera. Probl. Arkt. no.2:219-231 '57.
(MIRA 11:12)

(Photography, Aerial) (Ice)

GONIN, G.B., Cand Tech Sci — (diss) "Possibilities of photogrammetric measurements (based upon) aerial photographs taken with a slit camera." Len, 1959, 25 pp (Min of Higher Education. Len Order of Lenin and Order of Labor Red Banner Mining Inst im G.V. Plekhanov) 120 copies. Mimeographed. (KL, 34-59, 113)

Gonin, G.B.

PHASE I BOOK EXPLOITATION SOV/4149

Leningrad. Arkticheskiy i Antarkticheskiy nauchno-issledovatel'skiy institut

Problemy Arktiki; sbornik statey, vyp. 7 (Problems of the Arctic; Collection of Articles, No. 7) Leningrad, Izd-vo "Morskoy transport," 1959. 135 p. 500 copies printed. ERRATA SLIP

Additional Sponsoring Agency: USSR. Ministerstvo morskogo flota.

Resp. Ed.: V.V. Frolov; Editorial Board: L.L. Balakshin, A.A. Girs, P.A. Gordiyenko (Deputy Resp. Ed.), I.M. Dolgin, L.G. Kaplinskaya, A.A. Kirillov, Ye.S. Korotkevich, V.V. Lavrov, I.V. Maksimov, A.I. Ol', I.I. Pozdnyak, and B.V. Pelisov; Tech: L.P. Brozhzhina.

PURPOSE: The publication is intended for geographers, oceanographers, and particularly for all those interested in the studies of Arctic and Antarctic regions.

COVERAGE: This collection of 19 articles is the seventh of a series of publications dealing with problems of the Arctic and Antarctic. The articles deal mainly with the characteristics of water in the Barents Sea, hydrological conditions in the estuaries of Siberian rivers, types of atmospheric circulation in the Arctic, distribution of the hydrological stations in the Soviet Arctic, magnetic storms and their effect on radio communications. Included is brief information on Soviet meteorological and oceanographical expeditions. References accompany most of the articles. No personalities are mentioned.

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Novitskiy, V.P. Types of Water in the Northern Part of the Barents Sea, Their Formation and Transformation 25

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GONIN, G.B.

Estimating the amount of hummocked ice on the basis of aerial photogrammetric materials processed by statistical methods. Probl.Arkt.i Antarkt. no.3:93-100 '60. (MIRA 13:9)

(Arctic regions--Ice)
(Aerial photogrammetry)

GONIN, G.B.

PHASE I BOOK EXPLOITATION SOV/4610

Leningrad. Arkticheskiy i Antarkticheskiy nauchno-issledovatel'skiy institut

Problemy Arktiki i Antarktiki; sbornik statey, vyp. 3 (Problems of the Arctic and Antarctic; Collection of Articles, No. 3) Leningrad, Izd-vo "Morskoy transport," 1960. 119 p. 500 copies printed. [Xerox copy]

Sponsoring Agencies: Arkticheskiy i Antarkticheskiy nauchno-issledovatel'skiy institut Glavnogo upravleniya Severnogo morskogo puti Ministerstva morskogo flota SSSR.

Resp. Ed.: V.V. Frolov; Editorial Board: L.L. Balakshin, A.A. Girs, P.A. Gordiyenko (Deputy Resp. Ed.), I.M. Dolgin, L.G. Kaplinskaya, A.A. Kirillov, Ye.S. Korotkevich, V.V. Lavrov, I.V. Maksimov, A.I. Ol', I.I. Poznyak, and B.V. Felisov; Tech. Ed.: L.P. Droshshina.

PURPOSE: This collection of articles is intended for geographers and geophysicists, particularly those interested in the problems of the Arctic and Antarctic.

COVERAGE: This publication of the Arctic and Antarctic Scientific Research Institute contains articles on the water temperature in the Arctic Basin, the tides of Arctic seas, the structure of Arctic cyclones and anticyclones, radiosonde measurements of temperature, the determination of ice thickness by dipole electromagnetic methods, and magnetic activity in relation to geographical longitude and latitude. No personalities are mentioned. References follow each article.

Gavrilova, L.A. Structure of Winter Upper Level Anticyclones in the Arctic 31

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13.2840

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A066/A126

AUTHOR: Gonin, G.B.

TITLE: Measurement of the information content in interpreting aerial-photographs

PERIODICAL: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, v. 8, no. 1, 1963, 21 - 28

TEXT: It is first shown that the relationship between interpretable characteristics of aerial photographs and the objects photographed can be described by the theory of probability. The interrelation between the height and diameter of the tops of a pine-forest and the age of the trees is discussed together with the proper selection of characteristics. It is assumed that N groups of objects with the probabilities $P_1, P_2, \ldots, P_j, \ldots, P_N$ are to be identified from aerial photographs. The unconditional entropy

$$H = - P_1 \log P_1 - P_2 \log P_2 - \ldots - P_j \log P_j - \ldots - P_N \log P_N \qquad (1)$$

serves as a measure of uncertainty. A_i characteristics ($i = 1, \ldots, M$), each of

Card 1/4

which characterizes any object with the probability p_{ji}, are used for interpretation. Thus, the following probabilities are obtained:

$$\begin{array}{cccccc}
1 & p_{11} & p_{12} \cdot \cdot \cdot & p_{1i} & \cdot \cdot \cdot & p_{1M} \\
2 & p_{21} & p_{22} \cdot \cdot \cdot & p_{2i} & \cdot \cdot \cdot & p_{2M} \\
\cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\
j & p_{j1} & p_{j2} \cdot \cdot \cdot & p_{ji} & \cdot \cdot \cdot & p_{jM} \\
\cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\
N & p_{N1} & p_{N2} \cdot \cdot \cdot & p_{Ni} & \cdot \cdot \cdot & p_{NM}
\end{array}$$

Using the theorems of multiplication and addition, the probabilities

$$P(A_1) = P_1 p_{11} + P_2 p_{21} + \dots + P_j p_{j1} + \dots + P_N p_{N1} = \sum_{j=1}^{N} P_j p_{j1};$$

$$P(A_2) = P_1 p_{12} + P_2 p_{22} + \dots + P_j p_{j2} + \dots + P_N p_{N2} = \sum_{j=1}^{N} P_j p_{j2};$$

$$\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots \qquad (2)$$

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$$P(A_1) = P_1 p_{11} + P_2 p_{21} + \dots + P_j p_{j1} + \dots + P_N p_{N1} = \sum_{j=1}^{N} P_j p_{j1};$$

. . . .

$$P(A_M) = P_1 p_{1M} + P_2 p_{2M} + \dots + P_j p_{jM} + \dots + P_N p_{NM} = \sum_{j=1}^{N} P_j p_{jM}$$

are obtained, and after several operations one finds the mean conditional entropy

$$H_0 = \sum_{i=1}^{M} P(A_i)\, H(A_i)\,. \qquad (6)$$

The information content is defined by $I = H - H_0$ and obtained as

$$I = \sum_{j=1}^{N} P_j \sum_{i=1}^{M} p_{ji} \log p_{ji} - \sum_{i=1}^{M} \sum_{j=1}^{N} P_j p_{ji} \log \sum_{j=1}^{N} P_j p_{ji}\,. \qquad (7)$$

This formula is discussed for the cases $P_1 = P_2 = \dots = P_N = P$ and $N = M$. A

Measurements of the information content in S/077/63/008/001/001/003
A066/A126

practical example demonstrates that the present method can be used to estimate the information content of aerial photographs. There are 4 tables.

ASSOCIATION: Laboratoriya aerometodov AN SSSR (Laboratory of Air Methods AS USSR)

SUBMITTED: September 11, 1961

Card 4/4

GONIN, G.B., kand. tekhn. nauk, otv. red.

[Special problems in photogrammetry] Spetsial'nye voprosy fotogrammetrii. Moskva, Nauka, 1964. 117 p.
(MIRA 17:12)

L 38082-65 FSF(h)/FSS-2/EWT(l)/FS(v)-3/EEC(k)-2/[illegible] Pn-4/Pe-5/

[illegible] 04/00[illegible]/000/0009/0020

[illegible] of celestial bodies, photogrammetry [illegible] interpretation

USSR Gosudarstvennyy geologicheskiy [illegible] aerometodo[illegible]

L 47308-65 EWT(1)/T/EED(b)-3 Pae-2 IJP(c) [illegible]

[illegible] NR: AT5010230 UR/0000/64/000/000/0021/0030

[illegible]onin, G. B. (Candidate of technical sciences)

TITLE: Elements of the external orientation of photographs during the aiming of the optical axis towards the brightness center of a celestial object

SOURCE: USSR. Gosudarstvennyy geologicheskiy komitet. Laboratoriya aerometodov. Spetsial'nyye voprosy fotogrammetrii (Special problems in photogrammetry). [illegible] Izd-vo Nauka, 1964, 21-30

TOPIC TAGS: optical axis orientation, brightness center determination, [illegible] photography, orientation angle determination, photograph orientation, [illegible]metry

ABSTRACT: There have been several technical papers describing devices capable of discovering the brightness center of celestial objects (see, e.g., R. Rober- [illegible] of attitude sensing. Proceed[illegible] [illegible] Wilson, R. [illegible] [illegible] It is of current [illegible] [illegible] the spherical coordinates of the camera [illegible] and the [illegible] center of the celestial object taking into account the laws of re- [illegible] from the surface of the object. In his preceding paper, the author

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ACCESSION NR: AT5010230

0

introduced an appropriate system of coordinates for the formulation of the motion of the carrier in accordance with the equations of celestial mechanics (Spetsial'nyye voprosy fotogrammetrii, Moscow, Izd-vo Nauka, 1964, p. 5). Within such a coordinate system, the determination of the elements of external orientation reduced to the search for the general angle of inclination and the azimuth of the plane of the main vertical (which the author called in his preceding paper the "parameters of the view"). Of course, this must be preceded by a [illegible] determination of the brightness center of the [illegible] illuminated portion of [illegible]. These two goals are solved in the present paper, assuming that the photography is carried out in the visible region of the spectrum. In addition to all the pertinent formulas, the article contains a table with the calculated values of various functions involved. Orig. art. has: [illegible] formulas, 6 figures, [illegible]

ASSOCIATION: None

SUBMITTED: 17Oct64 ENCL: 00 SUB CODE: OP,AA

NO REF SOV: 006 OTHER: 004

mle

Card 2/2

SKUDARNOV, I.S.; GONIN, N.A.

Late results of triangular dilatation of the inferior puncta lacrimalis and activation of the superior lacrimal canal. Vest. oft. 74 no.2:35-38 '61. (MIRA 14:4)
(LACRIMAL ORGANS--SURGERY)

Gonin, S, L

KHOMYAKOV, A.M. [deceased]; MENDELEVICH, M.M.; GONIN, S.L.

Role of dehelmintization as a factor stimulating immunogenesis in horses producing antitoxic sera; preliminary report. Zhur.mikrobiol. epid. i immun. 28 no.1:110-114 Ja '57. (MLRA 10:3)

1. Iz Kazanskogo nauchno-issledovatel'skogo instituta vaktsin i syvorotok.

(HELMINTH INFECTIONS, therapy,
in horses prod. immune sera, role in immunogenesis (Rus))
(IMMUNE SERUMS,
eff. of ther. of helminth infect. in horses prod.serums on immunogenesis (Rus))

BARKOV, I.Ya., otv. red. (g. Chelyabinsk), **BUDANTSEV**, P.A., red., (g.Orenburg), GONIN, Ya.G., red., (g. Perm'), **KOCHETKOVA**, Ye. S., red.,(g.Chelyabinsk), **NAGIBIN**, F.F., red.,(g. Kirov), **SEMENOVICH**, A.F., red.,(g. Sverdlovsk), **CHAYKOVSKIY**, N.A., red.,(g. Ural'sk), **YAKOVKIN**, M.V., red., **MAKHOVA**, N.N., tekhn. red.

[Problems in teaching mathematics in secondary schools; a collection of articles] Voprosy prepodavaniia matematiki v srednei shkole; sbornik statei rabotnikov kafedr pedagogicheskikh institutov Ural'skoi zony. Moskva, Gos. uchebno-pedagog. izd-vo M-va prosveshcheniia RSFSR, 1958. 350 p. (MIRA 11:10)

(Mathematics --Study and teaching)

GONIN, Yevgeniy Grigor'yevich; KLYUYEV, V.V., red.; SMIRNOV, G.I., tekhn. red.; KHEYS, I.G., tekhn.red.

[Theoretical arithmetic; a textbook for students of physical and mathematical faculties of pedagogical institutes] Teoreticheskaia arifmetika; uchebnoe posobie dlia studentov fiziko-matematicheskikh fakul'tetov pedagogicheskikh institutov. Moskva, Gos.uchebno-pedagog.izd-vo M-va prosv. RSFSR, 1959. 231 p. (MIRA 12:6)
(Arithmetic)

VRAGOV, Yu.D.; GONDIN, Yu.N.

Study of the drive efficiency of a high-speed milling machine.
Stan. i instru. 36 no.1:20-22 Ja '65.

(MIRA 18:4)

SAENS, Visente [Saenz, Vicente]; MIKHAYLOV, L.R. [translator]; GONIONSKIY, S.A., kand.istor.nauk, red.; VASILEVSKAYA, E.G., red.; BELEVA, M.A., tekhn.red.

[Problems of interoceanic canals of the American continent] Problemy mezhokeanskikh putei Amerikanskogo kontinenta. Moskva, Izd-vo inostr.lit-ry, 1959. 203 p. Translated from the Spanish. (MIRA 13:1)
(Canals, Interoceanic)

GONIONSKIY, Semen Aleksandrovich, prof., doktor ist. nauk; LIVSHITS, Ya.L., red.; NAZAROVA, A.S., tekhn. red.

[Cuba strides forward] Kuba idet vpered. Moskva, Izd-vo "Znanie," 1962. 31 p. (Novoe v zhizni, nauke, tekhnike, Seriia: Mezhdunarodnaia, no.1) (MIRA 15:3)
(Cuba--Economic conditions)
(Cuba--Foreign relations)

GONIONSKIY, S.A., otv. red.; GRIGULEVICH, I.R., red.; YEFIMOV, A.V., red.; GORNOV, M.F., red.; RUDENKO, V.T., red.

[Chile; its politics, economy, culture] Chili; politika, ekonomika, kul'tura. Moskva, Nauka, 1965. 353 p. (MIRA 18:9)

1. Akademiya nauk SSSR. Institut Latinskoy Ameriki.

GONITEL', K.I

GONITEL', K.I., insh.; KHARAS, Z.B., insh.(Moskva)

Advanced method for assembling rectifying columns. Stroi.pred.neft. prom. 2 no.8:22-23 Ag '57. (MIRA 11:1)
(Petroleum refineries--Equipment and supplies)

GONKKIEWICZ, M.; BARZO, P.; BAKONYI, Z.; LANYI, M.

On the treatment of patients suffering from chronic bronchitis.
Orv.Hetil.105 no.22:1050-1051 My 31 '64.

GONN, YU. A.

"Methods of Approximation in the Investigation of Oscillations in Complex Autonomous Systems," by Yu. A. Gonn, Kolebaniya v turbomashinakh, M., AN SSSR, 1956, pp 179-190, (from Referativnyy Zhurnal -- Mekhanika, No 4, Apr 57, Abstract No 3904, by I. M. Volk)

"This article studies the autonomous link system of an n-concentrated mass during oscillations which appear as forces of internal and external friction and assumed to be small in comparison with regenerated forces.

SUM. 1391

GONN, YU. A.

"For the case when the oscillations of this system appear linear and are derived by differential equations in the form

$$m\ddot{x}_j + \Delta_j \dot{x}_j + \Delta_{j-1,j}(\dot{x}_j - \dot{x}_{j-1}) + \Delta_{j,j+1}(\dot{x}_j - \dot{x}_{j+1}) + k_{j-1,j}(x_j - x_{j-1}) + k_{j,j+1}(x_j - x_{j+1}) = 0 \quad (j=1,\ldots,n)$$

there is recommended an approximation method for determining the roots of a representative equation correct to the square of some small parameter. This method leads to calculation of the natural roots of equations having a power equal to one half that of the characteristic equation and to a subsequent calculated network not requiring conversion of the determinants.

"On the basis of this method, the investigation of linear oscillations is pointed out as the usual course in approximate calculation of the main selected characteristics (frequency and damping), for the case when the oscillations of autonomous link systems with small friction appear nonlinear." (U)

Sum.1391

BARNA, Laszlo, dr.; GONNERT, Laszlo, dr.

Diagnosis of megalo-ureter in an adult. Magy radiol. 13 no.1: 36-38 Ja '61.

1. Az Orvostovabbkepzo Intezet Koslemenye. Mb. ig. Barsony Jeno dr., az orvostudomanyok candidatusa, Rontgen Osztalya. Vezeto: Deak Pal dr. az orvostudomanyok candidatusa es Urologiai Osztalya. Vezeto: Farago Gyorgy dr.

(URETERS radiog)

GONOBOBLEV, F.I.

Long-awaited manual has been published. Sakh.prom. 34 no.9:
78 S '60. (MIRA 13:9)
(Food industry--Safety measures)

GONOBOBLEV, Fedor Ivanovich; DASHEVSKIY, Vladimir Isayevich;
CHUPEYEVA, L.N., red.

[Fundamentals of safety and fire prevention engineering; Program, methodological instructions and test problems for students of the higher education correspondence schools of the food industry] Osnovy tekhniki bezopasnosti i protivopozharnoi tekhniki; Programma, metodicheskie ukazaniia i kontrol'nye zadaniia dlia studentov zaochnykh vysshikh uchebnykh zavedenii pishchevykh spetsial'nostei. Moskva, Vysshaia shkola, 1964. 61 p. (MIRA 17:9)

GONOBOLIN, F.N.

[redacted]

"Problems in the psychology of attention in school." I.V. Strakhov. Reviewed by F.N. Gonobolin. Vop.psikhol. no.1: 107-109 Ja-F '56.

(Attention) (Strakhov, I.V.) (MLRA 9:5)

GONOBOLIN, F.N.

Professor N.A. Rybnikov's 75th birthday. Vop.psikhol. no.1: 116-117 Ja-F '56. (MLRA 9:5)
(Rybnikov, Nikolai Aleksandrovich, 1880-)

GONOBOLIN, F.N.; ZYKOVA, V.I.

Scientific session of the Institute of Psychology of the Academy of Pedagogical Sciences of the R.S.F.S.R. Vop.psikhol. 2 no.2:118-120 Mr-Ap '56. (MLRA 9:8)

(Psychology)

GONOBOLIN, F.N.

Some results of the work of the Institute of Psychology of the Academy of Pedagogical Sciences of the R.S.F.S.R. in 1956. Vop. psikhol. 3 no.2:152-155 Mr-Ap '57. (MLRA 10:6)

(Psychology)

GONOBOLIN, F. N.

GONOBOLIN, F.; CHEBYSHEVA, V.

Meeting devoted to the psychology of work. Sots.trud no.6:147-150
Je '57.
(MIRA 10:7)

(Work)

RUBINSHTEYN, S.L.; SOKOLOV, A.N.; LURIYA, A.R.; LEONT'YEV, A.N.; SMIRNOV, A.A.; ~~GONOBOLIN, F.N.~~; MENCHINSKAYA N.A.; ZHINKIN, N.I.; IGNAT'YEV, Ye.N.; EL'KONIN, D.B.; GUREVICH, K.M.; GUR'YANOV, Ye.V.; LEYTES, N.S.; KRUTETSKIY, V.A. Prinimali uchastiye: POLYAKOV,G.I.; SHEMYAKIN, F.N.; TEPLOV, B.M., red.; VVEDENSKAYA, L.A., red.; DRANNIKOVA, M.S., tekhn. red.

[Psychology]Psikhologiia; uchebnik dlia pedagogicheskikh institutov. Pod red. A.A.Smirnova i dr. Izd.2. Moskva, Uchpedgiz, 1962. 558 p. (MIRA 15:11)

1. Akademiya pedagogicheskikh nauk RSFSR, Moscow. Institut psikhologii.

(PSYCHOLOGY)

GONOBOLIN, F.N., a pedagogiai tudomanyok(pszichologia) kandidatusa (Moszkva)

Report on the work of the Institute of Psychology, Academy of Educational Sciences of the R.S.F.S.R. Magy pszichol szemle 21 no.2:276-280 '64.

VANYUKOV, A.P., aspirant; GONOKHOV, A.G.

Voltage stabilizer. Elek.i tepl. tiaga 5 no.12:16-17 D '61.
(MIRA 15:1)

1. Kafedra "Elektrosnabzheniye zheleznykh dorog" Leningradskogo instituta inzhenerov zheleznodorozhnogo transporta (for Vanyukov).
2. Zamestitel' nachal'nika uchastka energosnabzheniya, stantsiya Bogotol Vostochno-Sibirskoy dorogi (for Gonokhov).
(Voltage regulators)

GONOKHOV, A.N.

Esmarch's douche. Veterinariia 30 no.11:36-37 N '53. (MLRA 6:11)

1. Zaveduyushchiy Konezerskim zoovetuchastkom, g.Luga, Leningradskoy oblasti.

GONOKHOV, A.N.

Elimination of slow milking in cows. Veterinariia 36 no.10:42
O '59. (MIRA 13:1)

1. Zaveduyushchiy Shalashinskim veterinarnym uchastkom,
Soshikhinskogo rayona, Pskovskoy oblasti.
(Milking)

S/710/62/000/008/001/003
E075/E436

AUTHORS: Sklyar, V.T., Sabirova, G.V., Zhurba, A.S., Candidates of Chemical Sciences, Rozhin, V.P., Gonopol'skiy, L.Ye., Zvereva, A.D., Chuchvara, P.G., Engineers

TITLE: Preparation of freon oil ХФ-12 (KhF-12) from Anastasiyevka crude

SOURCE: Kiyev. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut ugol'noy, neftyanoy i gazovoy promyshlennosti. Nauchnyye zapiski. no.8. 1962. Neftepererabotka. 48-57

TEXT: The authors investigated the possibility of producing freon (refrigerant) oil KhF-12 from a naphthenic Anastasiyevka crude as only insufficient amounts of this oil can be obtained from Dosor and Balakhany crudes. The oils were produced in the L'vovskiy neftepererabatyvayushchiy zavod (L'vov Refinery) from the Anastasiyevka crude (IVth horizon). Vacuum distillates constituting 13.7 and 8 to 9% of the crude were acid refined giving oils having pour points below -38°C, flash points 164 to 180°C and viscosities ranging from 18 to 20.8 cs at 50°C. These oils did not satisfy the freon test (clouding of the oil/freon

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Preparation of freon oil ...

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mixture at -28°C). Unsuccessful attempts were made to lower the cloud point by treating the oils with urea and activated carbon. Satisfactory refrigerant oils were produced in the laboratory by double distillation of the crude with subsequent acid (70% of 92 to 96% H_2SO_4) and alkali treatment. Such oils had boiling points in the range 380 to 470°C (about 20% of the crude), pour points of about -47°C, and gave no clouding with freon at -28°C. Analysis of the oils after single distillation by silica gel fractionation established that the clouding at -28°C is due to medium and heavy aromatic hydrocarbons. The latter are largely removed by a second distillation of the oils. The addition of 0.2% of ionol (2,6-di-t-butyl-4-methylphenol) is recommended to increase the stability of the oils. To produce the refrigerant oils industrially, the vacuum distillation unit of the L'vov Refinery will have to be reconstructed and trial large-scale production carried out. There are 2 figures and 8 tables.

Card 2/2

RUDAKOVA, N.Ya.; SEREDA, Ya.I.; LOBOV, V.A.; POLISHCHUK, S.A.; GONOPOL'SKIY, L.Ye.

Acid-alkali removal of acid sludge and alkali waste from transformer distillate using electric separation. Neft. i gaz. prom. no.1:49-52 Ja-Mr '64. (MIRA 18:2)

MAN'KOVSKAYA, N.K.; SABIROVA, G.V.; TERENT'YEVA, V.N.; GONOL'SKIY, L.Ye.

Separating organic substances from the alkali waste products of carbon dioxide petroleum refining. Neft. i gaz. prom. no.2:55-57 Ap-Je '64. (MIRA 17:9)

SABIROVA, G.V.; MAN'KOVSKAYA, N.K.; PORUTSKIY, V.P.; TERENT'YEVA, V.N.; KOVAL'CHUK, L.V.; LEBEDEVA, L.B.; ROZHIN, V.P.; GONOPOL'SKIY, L.Ye.; CHUCHVARA, P.G.

Studying petroleum growth-promoting substances in the petroleum refineries of the Ukraine. Nefteper. i neftekhim. no.7:13-16 '64. (MIRA 17:11)

1. UkrNIIgiproneft' i L'vovskiy neftepererabatyvayushchiy zavod.

GONOPOL'SKIY, M. Kh. Cand Med Sci -- (diss) "~~The~~ History, contemporary state, and prospects of development of ~~the~~ psychiatric care ~~help~~ in the Kazakh SSR." Frunze, 1959. 17 pp (Kirgiz State Med Inst), 250 copies (KL, 44-59, 129)

GONOPOL'SKIY, M.Kh.

Two-stage care of patients in the psychiatric infirmary. Med. sestra 19 no.6:39-40 Je '60. (MIRA 14:1)

1. Glavnyy vrach 1-y Respublikanskoy psikhonevrologicheskoy bol'nitsy Kzyl-Ordy Kazakhskoy SSR.

(KZYL-ORDA--PSYCHIATRIC HOSPITALS)
(NURSES AND NURSING)

GONOPOL'SKIY, M.Kh.

From the history of psychiatry in Kazakhstan (up to the second half of the 19th century). Vop.psikh. no.4:41-46 '60. (MIRA 15:2)

1. 2-ay Respublikanskaya psikhonevologicheskaya bol'nitsa, g.Kzyl-Orda Vneshtatnyy nauchnyy sotrudnik Instituta Psikhiatrii AMN SSSR.
(KAZAKHSTAN—PSYCHIATRY)

GONOPOL'SKIY, M.Kh., kand.med.nauk

Ten-day meeting of head physicians and conference of subprofessional medical personnel in the psychiatric service of Kazakhstan. Zdrav.Kazakh. 22 no.3:71-74 '62. (MIRA 15:12)

1. Glavnyy psikhiatr Ministerstva zdravookhraneniya Kazakhskoy SSR.

(KAZAKHSTAN--PSYCHIATRY)

KONSTANTINOVSKIY, Ye.G.; GONOPOL'SKIY, M.Kh.

Discussions, surveys and reviews [of the article,] "Problems of neuropathology and psychiatry". Zhur.nevr.i psikh. 62 no.7:1103-1104 '62. (MIRA 15:9)
(PSYCHIATRY) (NERVOUS SYSTEM--DISEASES)

GONOPOL'SKIY, S.N.

Some results of work at Michurinsk Canning Combine under the new management system in industry. Kon. i ov. prom. 13 no.10:3-5 O '58.
(MIRA 11:10)

1.Michurinskiy konservnyy kombinat.
(Michurinsk--Canning industry)

DUL'MAN, E.M.; GONOPOL'SKIY, S.N.

Boring bar for boring holes. Mashinostroitel' no.1:28 Ja '65.
(MIRA 18:3)

CHISTYAKOV, A.N., GONOR, A.A., SHUL'MAN, A.I.

Some data on the chemical composition of pitch distillates. Trudy LTI no.58:71-74 '59. (MIRA 13:7)

1. Leningradskiy tekhnologicheskiy institut im. Lensoveta. (Coal-tar products)

AUTHORS: Gonor, A.L. and Chernyy, G.G. (Moscow). 24-7-11/28

TITLE: On the bodies with a minimum resistance at high supersonic speeds. (O telakh naimen'shego soprotivleniya pri bol'shikh sverkhzvukovykh skorostyakh).

PERIODICAL: "Izvestiya Akademii Nauk, Otdeleniye Tekhnicheskikh Nauk" (Bulletin of the Ac.Sc., Technical Sciences Section), 1957, No.7, pp.89-93 (U.S.S.R.)

ABSTRACT: In an earlier paper by one of the authors (1) it was established that, in the case of movement with a high supersonic speed, the pressure p at the surface of axis-symmetrical bodies or on the plane contours of such bodies can be expressed by eq.(1), p.89 if the turns of the order $(\gamma-1)/(\gamma+1)$ are disregarded (γ - heat capacity ratio). The resistance coefficient of bodies of optimum shape is determined by eq.(4), p.91. The following two limit cases are considered: the angles between the tangent to the contour and the direction of the incident flow are small everywhere, i.e. $p \ll 1$ and the case in which $p_0 = \infty$. The shape of the generatrix of the solid of revolution with minimum external resistance is determined by eq.(5), p.91, which is equivalent to the relation determined a long time

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On the bodies with a minimum resistance at high supersonic speeds. (Cont.)

24-7-11/28

ago by Newton.

2/2 There are two figures, two tables and three references, two of which are Slavic.

SUBMITTED: September 18, 1956.

AVAILABLE:

SOV/24-58-7-17/36

AUTHOR: Gonor, A.L. (Moscow)

TITLE: Flow Round a Cone at the Angle of Incidence With High Supersonic Speed (Obtekaniye konusa pod uglom ataki s bol'shoy sverkhzvukovoy skorost'yu)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, 1958, Nr 7, pp 102 - 105 (USSR)

ABSTRACT: The equations of motion, which are written in spherical polar co-ordinates, are transformed by the introduction of a new variable which is similar to the ordinary stream function for plane or axi-symmetric flow. The flow of the gas takes place in a thin layer between the surface of the body and that of the shock wave. From the boundary conditions it is seen that the density behind the shock wave for $M \to \infty$ increases to infinity as $\gamma \to 1$ and is very large for values of γ near unity. Using these properties of the flow for large supersonic velocities, Chernyy (Ref 1) has developed an analytic method of solution for plane and axi-symmetric problems. His method is adopted in this paper. The expression obtained for the pressure is more precise than Newton's well-known formula, due to the presence of an integral taking account of the

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effect of centrifugal forces. In Refs 2-4, attempts were made to evaluate the size of such forces under various assumptions. The method is valid when :

$$M^2 \sin^2(\theta_k - \alpha) \gg 1$$

where α is the angle of incidence. From this inequality, it follows that, as $M \to \infty$, flow round an arbitrary cone with angle of incidence $\alpha < \theta_k$ can be considered. On the other hand, it is known from experiment that for Mach numbers greater than about 4, the properties of the flow remain practically constant so that when the above inequality does not hold the calculation can be carried through with $M = \infty$.

A comparison is made graphically between experimental

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results, the theory of Stoun-Kopal and that of the present paper, for $M = 6.9$, $\alpha = 6.7^\circ$. The comparison is favourable to the present theory. There are 3 figures and 7 references, 3 of which are Soviet and 4 English.

SUBMITTED: December 26, 1957

Card 3/3

GONOR, A. L.: Master Phys-Math Sci (diss) -- "The flow of a gas stream with high supersonic velocity around conic bodies". Moscow, 1958. 6 pp (Moscow State Order of Lenin and Order of Labor Red Banner U im M. V. Lomonosov, Inst im P. I. Baranov), 150 copies (KL, No 2, 1959, 117)

SOV/179-59-1-4/36

AUTHOR: Gonor, A. L. (Moscow)

TITLE: Flow of Gas with High Supersonic Velocity Around Cones (Obtekaniye konicheskikh tel pri dvizhenii gaza s bol'shoy sverkhzvukovoy skorost'yu)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1959, Nr 1, pp 34-40 (USSR)

ABSTRACT: A method is described of air flow around circular cones (with surface defined as $F(x/z, y/z) = 0$) with an application of shock waves. The calculation of the flow is based on the Lagrange equations (1.1), where the variable $\phi = \phi(\theta, \varphi)$ is introduced in the form of:

$$\frac{v}{A_1}\frac{\partial\phi}{\partial\theta} + \frac{w}{A_2}\frac{\partial\phi}{\partial\varphi} = 0$$

(A_1, A_2 - coefficients, u, v, w - projections of velocities on the axis r, θ, φ ; p, ρ, γ - pressure, density, thermal conductivity, ϕ - surface). The variable ϕ = const represents the surface of flow around a unit of sphere with its centre at the apex (Fig.2, circles = shock waves). When

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$\psi_\theta = 1/\theta_\psi$, $\psi_\psi = -\theta_\varphi/\theta_\psi$ the Eqs.(1.1) will take the form Eqs.(1.2). The solution will be found when the following conditions are satisfied:(1) The properties of the shock waves (with surface $\theta^*(\varphi)$) should be described by Eqs.(1.3); (2) The velocity at the surface ($\theta = \theta_k$ = const) should be $v = 0$.

The components of the velocity at the shock wave surface can be calculated from Eqs.(1.4) (Fig.1). The solution of Eq.(1.2) will have a form of series with steps $\varepsilon = (r - 1)/(\gamma + 1)$. The unknown functions will be defined as series (1.2). These are substituted for Eqs.(1.2), (1.3), (1.4) in order to find the terms with equal indexes. This can be done by performing the calculations Eqs.(2.1-2.8) so that:

$$\frac{\partial\varphi^0}{\partial\varphi}(w_0)_{\varphi'=\varphi^0} = 0$$

is obtained. It gives two solutions, first, as found by Ferry in Ref.3 and second, by considering $\partial\varphi^o/\partial\varphi \neq 0$. In this case, φ^o can be found from Eq.(2.9). Taking $\varphi^o = \varphi'$ in Eq.(2.7), and defining the relation:

$$A_{2\theta} = \tau \frac{dt}{d\varphi} \quad , \quad \tau\left\{x_\varphi/A_2, \; y_\varphi/A_2, \; z_\varphi/A_2\right\} \quad ,$$

the solution is found by the method shown in Fig.3 (τ - unit vector). The problem of the flow around a plane, triangular wing with the angle 2β at the apex (Fig.4) can be solved as follows. The surface of the wing is described by $\theta^* = \theta_k = 0$ and the coordinates are as expressed in Eq.(3.1). The coefficients $A_1 = 1$, $A_2 = \cos\theta$, the values U_0^o, v_ϑ^o , w_0^o are found from Eq.(1.4), α taken as $(-\alpha)$ and the parameters of flow based on Eqs.(2.3), (2.4), (2.7) and (2.8) are given in Eqs.(3.3). The surface of the shock wave is found from the expression $(\varepsilon\theta_0 + \varepsilon^2\theta_1)$ at $\varphi' = \varphi$. The cross-section of this surface by the plane $z = 1$ can be based on Eq.(3.1) so that the coefficients C_x and C_y could be

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expressed as Eqs.(3.4). Fig.5 shows the results of the theoretical and experimental analysis of the triangular wing with a diamond-shaped profile of 5% thickness, $\beta = 30^0$, $M = 6.9$, $\gamma = 1.4$ (Ref.6). The curves are calculated from Eq.(3.4) (Ref.7). Similarly, the problem of flow around an elliptic cone of the surface

$$x^2/a^2z^2 + y^2/b^2z^2 - 1 = 0$$

can be solved. The series of surfaces based on the coordinates with a parameter Θ can be obtained from Eq.(4.1). Another surface can be found when

$$\text{arc tg } a \leqslant \Theta < 1/2\,\pi \quad \text{for} \quad 0 = \text{const}$$

is considered or from Eq.(4.2). The coefficients A_1 and A_2 can be found from Eqs.(4.1) and (4.2) and shown as Eqs.(4.3). The components of the flow are calculated from Eq.(1.4) and presented as Eqs.(4.4). Figs.6 and 7 show the graphs of the pressure coefficient C_p for the elliptic cone when $M = \infty$ and $\alpha = 0$ and Y calculated from:

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Flow of Gas with High Supersonic Velocity Around Cones

$$Y = y_1 \frac{a/b}{\mathrm{tg}\theta_k}, \quad \frac{a}{b} = \frac{4}{5}, \frac{2}{3}, \frac{1}{2}, \frac{1}{3}, \frac{1}{5},$$

$$\ell = 1.16,\ 3.1 \left(\ell = \frac{1}{\sqrt{\pi ab}}\right).$$

The analysis of $(\theta_o^*)_\varphi$ from the integral (2.8) shows that the shock wave with a small $a/b \neq 0$ does not break. There are 7 figures and 8 references, of which 6 are Soviet and 2 are English.

SUBMITTED: June 9, 1958.

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67598

10.6000

SOV/179-59-5-19/41

AUTHOR: Gonor, A. L. (Moscow)

TITLE: On the Angle of a Head Wave in an Asymmetric Gas Flow at Supersonic Velocity Past a Pointed Body

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1959, Nr 5, pp 117-118 (USSR)

ABSTRACT: The form of a head wave propagating in a direction inclined to the axis of a pointed body, such as a cone, is considered. The jumps in the angle of inclination $\theta^*_{\pm}$ in this case can be determined from the formula on p 117, where θ_o - half-angle of cone, α - angle of propagation, $\gamma = 1.4$ - adiabatic index; the top sign corresponds to a meridional plane on the windward side, the lower sign - leeward side. The results of calculations based on this formula for $M = 4$ and ∞ are given in Figs 1 and 2, where the continuous lines correspond to the windward side, the dashed lines - to the leeward side. The graphs show interesting variations of the wave angle in relation to M, i.e. at $M = 4$ the angle of jump is greater at the leeward side

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than that at the windward side, while at $M = \infty$ the angles are reversed. Experiments with scale models for $\theta_o = 15$ showed that the angle of jumps could be measured by a photographic method, where the angle is taken from:
1) a projected photographic negative of the wave;
2) an enlarged photograph;
3) a microscope (least reliable method).
The results of such measurements are shown in Fig 1, where: the circles represent the experimental values for the windward, the rectangles - leeward side. Fig 3 shows a photograph of the flow at $\theta_o = 40°$ for $\alpha = 12°$ and $M = 4$, where the difference between the angles at the leeward and windward sides can be seen.
There are 3 figures and 2 Soviet references.

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SUBMITTED: May 7, 1959

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GONOR, A. L. (Moscow)

"On Gas Flows Past Bodies at High Supersonic Speeds."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

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S/040/60/024/006/012/024
C 111/ C 333

AUTHOR: Gonor, A. L. (Moscow)

TITLE: Determination of the Form of Bodies of Minimum Resistance Under High Supersonic Velocities

PERIODICAL: Prikladnaya matematika i mekhanika, 1960, Vol. 24, No.6, pp. 1073-1078

TEXT: The author considers the flow around a body (plane or axial-symmetric) by a gas with supersonic velocity. According to Busemann and (Ref. 2). the resistance coefficient is

$$(1)\quad C_x = \frac{2\nu}{r_1^{\nu} - r_0^{\nu}}\left[\frac{r_1^{\nu} - r_0^{\nu}}{\nu} - \frac{1}{(1+r_1'^{2})^{1/2}}\int_0^1 \frac{r^{\nu-1} r' ds}{(1+r'^{2})^{1/2}}\right]$$

where in the plane case $\nu = 1$, $r_0 = 0$ and C_x is related to one side of the profile, while in the axialsymmetric case $\nu = 2$ and C_x is related to

$$\pi(r_1^2 - r_0^2)\ ;$$

r_1' is the derivative in the end point of the contour. Remaining denotations see figure 1

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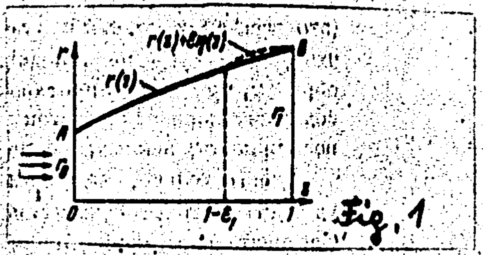

Fig. 1

The contour is assumed to be smooth with finite jumps of the second derivative in single points. In order that the pressure along the contour be nonnegative, it must be

$$(2)\quad r'^2 + \frac{r''}{r^{\nu-1}(1+r'^2)^{1/2}} \cdot \int_0^z \frac{r' r^{\nu-1} dz}{(1+r'^2)^{1/2}} \geq 0$$

according to (Ref.2).

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Theorem: For a body with given r_o, r_1 the minimum of (1) can be obtained under condition (2) only on curves for which on a certain terminal interval $c \leqq z \leq 1$ the inequality (2) becomes an equation (i. e. $p = 0$). Subsequently the resistance arises only by the front $0 \leqq z \leqq c$, and instead of (1) it can be written

$$(5)\quad C_x = \frac{2\nu}{r_1^\nu - r_o^\nu}\left[\frac{r_c^\nu - r_o^\nu}{\nu} - \frac{1}{(1+r_c'^2)^{1/2}}\int_0^c \frac{r^{\nu-1} r' dz}{(1+r'^2)^{1/2}}\right]$$

The variation of C_x is now formed (for variable c, r_o, r_c'):

$$(6)\quad \delta C_x = \frac{2\gamma r_c^{\nu-1} r_c'^2}{(r_1^\nu - r_o^\nu)(1+r_c'^2)^2}\Big\{ (2+r_c'^2)\delta r_c - r_c' \delta c +$$

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$$+\frac{(1+r_c'^2)^{1/2}\,\delta r_c'}{r_c'\,r_c^{\nu-1}}\int_0^c \frac{r^{\nu-1}r'\,dz}{(1+r'^2)^{1/2}}-\frac{(1+r_c'^2)^{3/2}}{r_c'^2\,r_c^{\nu-1}}\cdot \tag{6}$$

$$\left.\int_0^c\left[F_r-\frac{d}{dz}(F_{r'})\right]\delta r\,dr\right\}\qquad F=\frac{r^{\nu-1}r'}{(1+r'^2)^{1/2}}\qquad \delta r_c\neq\delta r \text{ for } z=c\ .$$

On the optimum curve ($0 \leq z \leq c$) it must be $\delta C_x = 0$. If the author restricts himself to admissible curves with $r_c' =$ const = direction coefficient of the extremal of the last integral in the curved brackets in (6), then the sought curve will be optimum also for this narrower admissible class. Subsequently the Eulerian equation must be satisfied for F(according to (6)).

The results of the solution for the plane case are identical with

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those of Hayes (Ref.3). Therefore, only the solution for the axial-symmetric case is given, where (Ref.2) is essentially used.

The extremals of the afore-mentioned Eulerian equation are given by

$$(7)\quad \frac{r}{c} = \frac{R(\alpha)}{z(\alpha_1) - z(\alpha_0)}, \quad \frac{z}{c} = \frac{z(\alpha) - z(\alpha_0)}{z(\alpha_1) - z(\alpha_0)}$$

$$R(\alpha) = \frac{1}{\sin^3\alpha}, \quad z(\alpha) = \frac{3}{4}\frac{\cos^3\alpha}{\sin^4\alpha} + \frac{3}{8}\frac{\cos\alpha}{\sin^2\alpha} + \frac{3}{8}\ln \operatorname{tg}\frac{\alpha}{2}$$

where $\alpha = \text{arc tg}\,(dr/dz)$ for $0 \leqq z \leqq c$ varies in the interval $\alpha_0 \leqq \alpha \leqq \alpha_1$. In the end points of the contour it holds

$$(8)\quad \frac{r_0}{c} = \frac{R(\alpha_0)}{z(\alpha_1) - z(\alpha_0)}, \quad \frac{r_c}{c} = \frac{R(\alpha_1)}{z(\alpha_1) - z(\alpha_0)}, \quad \alpha_0 = \text{arc sin}\left[\left(\frac{r_c}{r_0}\right)^{1/3} \sin\alpha_1\right]$$

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The magnitudes r_c and r'_c are determined from

$$\Delta^3 + 3\Delta^2 + 6k\left(\frac{1}{r'_c} - \frac{1}{r_1}\right)\Delta + 6k\left[\frac{z(\alpha_1) - z(\alpha_0)}{R(\alpha_1)} - \frac{1}{r_1}\right] = 0$$

$$(11)\ \Delta = \frac{r_1}{r_c} - 1$$

$$k = \frac{\sin^7\alpha_1}{2}\left[\frac{\cos\alpha}{\sin^6\alpha} - \frac{1}{4}\frac{\cos\alpha}{\sin^4\alpha} - \frac{3}{8}\frac{\cos\alpha}{\sin^2\alpha} + \frac{3}{8}\ln \operatorname{tg}\frac{\alpha}{2}\right]_{\alpha_0}^{\alpha_1}$$

and

$$(13)\quad M_1(r_c, r'_c)\, N_2(r_c, r'_c) - N_1(r_c, r'_c)\, M_2(r_c, r'_c) = 0$$

where M_1 and M_2 are given by

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$$M_1(r_c, r_c') = 2 + r_c'^2 - \frac{r_c'}{R(\alpha_1)}\left[z(\alpha_1) - z(\alpha_0) - \frac{z'(\alpha_0)}{3\,\mathrm{ctg}\,\alpha_0}\right] \qquad (10)$$

$$M_2(r_c, r_c') = \frac{k(1+r_c'^2)^2}{r_c'^3} - \frac{r_c'}{R(\alpha_1)}\left\{z'(\alpha_1) - \frac{R'(\alpha_1)}{R(\alpha_1)}\left[z(\alpha_1) - z(\alpha_0) - \frac{z'(\alpha_0)}{r_c'\,\mathrm{ctg}\,\alpha_0}\right]\right\},$$

while $N_1(r_c, r_c')$ and $N_2(r_c, r_c')$ have the values:

$$N_1(r_c, r_c') = \frac{kz'(\alpha_0)}{3R(\alpha_1)\,\mathrm{ctg}\,\alpha_0} + \frac{r_1}{r_c}\left[\frac{\Delta^2}{2} + \Delta + k\left(\frac{1}{r_c'} - \frac{1}{r_1}\right)\right] - \frac{k_{\alpha_0}'\,\mathrm{tg}\,\alpha_0}{3r_c'}\left[\Delta\left(\frac{1}{r_c'} - \frac{1}{r_1}\right) + \frac{z(\alpha_1) - z(\alpha_0)}{R(\alpha_1)} - \frac{1}{r_1}\right].$$

$$N_2(r_c, r_c') = \frac{k(1+r_c'^2)}{r_c'^2}\Delta - \frac{k}{R(\alpha_1)}\left\{z'(\alpha_1) - \frac{R'(\alpha_1)}{R(\alpha_1)}[z(\alpha_1) - z(\alpha_0)] - \frac{z'(\alpha_0)}{r_c'\,\mathrm{ctg}\,\alpha_0}\right\} - \left[\left(\frac{1}{r_c'} - \frac{1}{r_1}\right)\Delta + \frac{z(\alpha_1) - z(\alpha_0)}{R(\alpha_1)} - \frac{1}{r_1}\right]\left[k_{\alpha_1}' + \frac{k_{\alpha_0}'}{r_c'\,\mathrm{ctg}\,\alpha_0}\right]$$

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The final part $(c \leq s \leq 1)$ of the sought curve corresponds to the curve with vanishing pressure of Lighthill (Ref.4).

A numerical example for the application of the method yields a solution, the resistance of which is about 20 % smaller than the resistances of the known optimal bodies.

The author thanks G. G. Chernyy for the subject.

There are 3 figures, and 5 references: 2 Soviet and 3 American.

[Abstracter's note: (Ref.2) is a paper of the author and G. G. Chernyy in Izv. AN SSSR. OTN, 1957, No. 7; (Ref.3) is the book of W. D. Hayes and R. F. Probstein: Hypersonic flow theory. Academic Press, New York, 1959; (Ref.4) is a paper of M. J. Lighthill in J. Fluid Mech., 1957, Vol. 2].

SUBMITTED: July 2, 1960

Card 8/8

GONOR, A.L.; MARMORSHTEYN, L.M.

Method for calculating the porosity of rocks under rock pressure.
Trudy NIIGA 132:143-151 '62. (MIRA 16:4)
(Oil sands) (Porosity)

S/179/63/000/001/024/031
E191/E135

AUTHORS: Arutyunov, Yu.S., and Gonor, A.L. (Moscow)

TITLE: The upsetting of a thin forging of arbitrary planform

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye, no.1, 1963, 166-171

TEXT: A body of plastic material to be forged is compressed between two practically undeformable surfaces of a die approaching each other. At an initial instant, the blank is bounded by a given arbitrary contour. The thickness of the forged material can be non-uniform but varies smoothly. The thickness dimensions are small compared with the planform. The spreading in planform is unrestrained. Referring to A.A. Il'yushin (PMM, v.19, no.6, 1955) the generalized pressure is written down. The mathematical derivation leads to a Cauchy type problem, the general solution of which is given. The examples of a rectangular plate and of a tapered rectangular plate are treated in detail. The regions of flow and the distribution of pressure are obtainable from given

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formulas. Regions of flow are illustrated diagrammatically in both cases. For the tapered plate, the boundaries between Coulomb and Prandtl friction regions are given.
There are 4 figures.

SUBMITTED: July 11, 1962

Card 2/2

GONOR, A.L. (Moskva)

On three-dimensional bodies of minimum drag at high hypersonic speeds. Prikl. mat. i mekh. 27 no.1:185-189 Ja-F '63.
(MIRA 16:11)

GONOR, A.L. (Moscow):

"An exact solution of the problem of a supersonic gas flow past three-dimensional bodies".

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jand - 5 Feb 64.

ACCESSION NR: AP4027600 S/0040/64/028/002/0383/0386

AUTHOR: Gonor, A. L. (Moscow)

TITLE: Conical bodies with a minimum drag in a hypersonic gas flow

SOURCE: Prikladnaya matematika i mekhanika, v. 28, no. 2, 1964, 383-386

TOPIC TAGS: conical body, hypersonic gas flow, Newtonian flow, Euler equation

ABSTRACT: The author found the optimal form for a thin three-dimensional body in the framework of Newtonian flow. Restriction on the thickness of the body is dictated by the necessity of reducing the problem to the solution of an ordinary differential equation, since otherwise the extremals must be determined by complicated second-order nonlinear partial differential equations. In certain cases however, keeping the expression for drag obtained in the above paper and narrowing the class of admissible surfaces, it is possible to find the optimal form of a thick three-dimensional body without significantly complicating the solution. For example, in the class

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of arbitrary conical surfaces f(x) = x, 0 ≤ x ≤ 1 (Fig. 1 of the Enclosure), the cross section of the body of minimum drag is determined from the condition of the minimum of the functional

$$C_x = \frac{1}{S}\int_0^{2\pi}\frac{r^4(\varphi)\,d\varphi}{1 + r^2(\varphi) + r'^2(\varphi)/r^2(\varphi)}$$

$$\left(S = \frac{1}{2}\int_0^{2\pi} r^2\,d\varphi\right)$$

Here the coefficient of resistance C_x is referred to the area of the midsection S. The obtained relations are complicated for calculations, so the author introduces approximate formulas for solving the problem. In the case of flow around bodies of simple form (the body of a revolution, cone at an angle of attack, etc.), Newton's formula gives a good approximation, starting with Mach five and up. At present no reliable experimental results have been obtained for more complex configurations. The solution of the variational problem

ACCESSION NR: AP4027600

obtained for a thin body, and in the case treated here by the author makes it possible to construct an optimal transverse contour only for values of the parameter S within definite limits. The author discusses the construction of optimal contours in other cases. Orig. art. has: 5 figures and 9 formulas.

ASSOCIATION: none

SUBMITTED: 12Apr63	DATE ACQ: 28Apr64	ENCL: 01
SUB CODE: ME	NO REF SOV: 001	OTHER: 000

Card 3/[illegible]

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ASD(f)-2/AEDC(a)/ASD(p)-3/AFETR/AFTC(a)
ACCESSION NR: AP4046278 S/0040/64/028/005/0974/0976

AUTHOR: Gonor, A. L. (Moscow)

TITLE: Exact solution of a supersonic flow over three-dimensional bodies of star-like shape

SOURCE: Prikladnaya matematika i mekhanika, v. 28, no. 5, 1964, 974-976

TOPIC TAGS: supersonic flow, shock wave, oblique shock wave drag, wave drag, star like body drag

ABSTRACT: An exact solution of the problem of supersonic flow over three-dimensional bodies of star-like shape is presented. The purpose of the study was to establish whether or not the decrease in drag obtained by using the Newton pressure-distribution formula is substantiated by the results. A system of [illegible] intersecting shock waves passing through a coordinate origin and defined by angles α and γ is considered (see Fig. 1. of the Enclosure). Curves of the drag ratio of a body equivalent in length and volume to a star-like body show that with an increase in angle α, the difference between

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ACCESSION NR: AP4046278

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[illegible] diminishes. Nevertheless the drag of a star-like body is still
[illegible] times smaller than that of an equivalent cone, even at large
[illegible]. The difference between these results and those obtained
by using the Newton formula is on the order of [illegible]. [illegible] results con-
[illegible] previous data on the substantially low values of the wave drag
[illegible]-like bodies. Orig. art. has: 4 figures and 6 formulas.

ASSOCIATION: none

SUBMITTED: 27Feb64 ENCL: 01 SUB CODE: ME

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ACCESSION NR: AP4046278 ENCLOSURE: 01

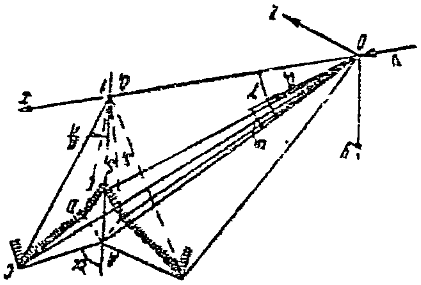

Fig. 1. Flow configuration

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ACCESSION NR: AP5021709 UR/0373/65/000/004/0024/0030

AUTHOR: Gonor, A. L. (Moscow)

37B

TITLE: Determining the optimum shape of a three-dimensional body with friction taken into account

14

SOURCE: AN SSSR. Izvestiya. Mekhanika, no. 4, 1965, 24-30

TOPIC TAGS: hypersonic aerodynamics, aerodynamic drag, aerodynamic configuration, variational problem, Euler equation friction, friction coefficient

ABSTRACT: The problem of determining the optimum shape of a three-dimensional body in hypersonic flow is considered under the following assumptions: a) the distribution of pressure coefficients obeys Newton's law; b) the local friction coefficient C_τ^0 is constant. This problem is reduced here to two variational problems which consist in determining the extremals of two functionals describing the longitudinal and transverse contours of the body. The two problems are formulated and solved independently, using the Euler equation, with Weierstrass-Erdmann conditions taken into consideration. Some specific limiting cases are investigated which allow simple solutions. The ratio of the total drag of a starlike body in terms of the drag of equivalent optimal body versus the parameter $s = S/\pi r_0^2$ is given in a

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